

REMARKS

This Amendment is a fully responsive to the final Office Action dated August 17, 2009, issued in connection with the above-identified application. A request for continued examination (RCE) accompanies this Amendment. Claims 18-34 are pending in the present application. With this Amendment, claims 18, 19, 20, 22 and 29 have been amended. No new matter has been introduced by the amendments made to the claims. Favorable reconsideration is respectfully requested.

I. Interview

At the outset, the Applicants thank Examiner Monikang for granting the personal interview (hereafter “interview”) conducted with the Applicants’ representatives on October 21, 2009. During the interview, the distinguishable features between the present invention (as recited in independent claim 18) and the cited prior art were discussed in detail.

It was noted that the present invention (as recited in independent claim 18) is distinguishable from the cited prior art in that a diaphragm including a magnetic member is displaced from a balanced position when the magnetic member made of a magnetic material receives a pulling force in a direction which causes the diaphragm (including the magnetic member) to travel away from the balanced position by the magnetic field formed by the first and second magnetic circuits. That is, the movement of the diaphragm is enhanced by the magnetic relationship between the magnetic member and the first and second magnetic circuits, which are features that are not believed to be disclosed or suggested by the cited prior art.

At the conclusion of the interview, the Examiner indicated that the present invention (as recited in independent claim 18) appears to be distinguished from the cited prior art (i.e., based on the above features). However, the Examiner also indicated that further search and consideration of other prior art would be necessary before making a final determination regarding the allowability of the claims. The Examiner noted Azima et al. (U.S. Patent No. 6,332,029, hereafter “Azima”) as a reference that would be further considered. In particular, the Examiner noted that Fig. 11 of Azima (see e.g., Fig. 11a) could be relevant to the present invention (as recited in independent claim 18).

II. Azima Reference

The Applicants have now reviewed Azima in detail.

During the interview, the Examiner suggested that the radiator panel 2 can be vertically moved, with reference to FIG. 11 of Azima. However, a driving force for driving the radiator panel 2 is obtained from a magnetic force to the coils 13 of the magnets 15. Additionally, Azima does not disclose or suggest that the radiator panel 2 includes a magnetic member. In the structure shown in FIG. 11 of Azima, poles 14 are disposed above and below the magnets 15, respectively, and magnetic flux from the magnets 15 almost entirely flows through the poles 14. That is, a magnetic force is not applied to the radiator panel 2.

Therefore, Azima does not disclose or suggest the features of the present invention (as recited in independent claim 18). That is, Azima fails to disclose or suggest the features of "a diaphragm including a magnetic member and when a vibration system member is displaced to a first magnetic circuit from a balanced position, the diaphragm including the magnetic member receives a pulling force in a direction which causes the magnetic member to go away from the balanced position by the magnetic field formed by the first magnetic circuit; and when the vibration system member is displaced to a second magnetic circuit from a balanced position, the diaphragm including the magnetic member receives a pulling force in a direction which causes the magnetic member to go away from the balanced position by the magnetic field formed by the second magnetic circuit." Thus, Azima fails to disclose or suggest a diaphragm including a magnetic member that makes it is possible to obtain an effect that an amplitude can be increased.

As described above, the present invention (as recited in independent claim 18) is clearly distinguished from Azima in that Azima does not disclose or suggest a diaphragm that includes a magnetic member, and that an amplitude can be increased by a pulling force received by the magnetic member from first and second magnetic circuits.

III. Rejections under 35 U.S.C. 103(a)

In the Office Action, claims 18-29 and 32-34 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe (U.S. Patent No. 6,735,322, hereafter "Watanabe"). The Applicants have amended independent claim 18 to more clearly distinguish the present invention

from the cited prior art. The amendments made to independent claim 18 are consistent with the features noted during the interview conducted with the Examiner on October 21, 2009. As amended, independent claim 18 recites the following features:

“[a] speaker device comprising:

a housing having an opening portion;

a vibration system member vibrating to generate sound;

a support system member connected to said housing and for supporting said vibration system member in a manner which allows said vibration system member to vibrate;

a first magnetic circuit disposed inside said housing and having a first magnet provided on a surface thereof facing the opening portion, and a first yoke provided lateral to the first magnet; and

a second magnetic circuit having a second magnet disposed facing the first magnet of said first magnetic circuit via a first magnetic gap, and a second yoke provided lateral to the second magnet,

wherein a second magnetic gap is formed in at least one of an interval between a side surface of the first magnet and the first yoke in said first magnetic circuit and an interval between a side surface of the second magnet and the second yoke in said second magnetic circuit,

said vibration system member includes:

a first voice coil;

a first voice coil bobbin provided to dispose the first voice coil in the second magnetic gap; and

a diaphragm including a magnetic member, the magnetic member being made of a magnetic material other than a magnet, being connected directly or indirectly to the first voice coil bobbin and being disposed in the first magnetic gap between the first magnet of said first magnetic circuit and the second magnet of said second magnetic circuit, wherein

when said vibration system member is displaced to said first magnetic circuit from a balanced position, the magnetic member receives a pulling force in a direction which causes the

magnetic member to travel away from the balanced position by the magnetic field formed by said first magnetic circuit and

when said vibration system member is displaced to said second magnetic circuit from a balanced position, the magnetic member receives a pulling force in a direction which causes the magnetic member to travel away from the balanced position by the magnetic field formed by said second magnetic circuit.” (Emphasis added).

The features emphasized above in independent claim 18 are fully supported by the Applicants’ disclosure (see ¶[0069]; ¶[0093] and ¶[0094]).

As noted during the interview, the present invention (as recited in independent claim 18) is distinguishable from the cited prior art in that the vibration system member (the diaphragm 9a) includes a magnetic member made of a magnetic material other than a magnet (the non-magnet member 91a) that receives a pulling force in a direction which causes the magnetic member (the non-magnet member 91a) to travel away from the balanced position by the magnetic field formed by the first and second magnetic circuits. Therefore, the speaker device of the present invention (as recited independent claim 18) has an advantage that it can reduce the acoustic stiffness so that the minimum resonant frequency of the speaker unit 2a is reduced.

In the Office Action, the Examiner relies on Watanabe for disclosing or suggesting all the features of the speaker device of claim 18.

Watanabe discloses a speaker that includes a ring-like magnet 40, a yoke 41, a voice coil 42, a cylindrical magnet 43 and a plate 44. However, as agreed during the interview conducted on October 21, 2009, Watanabe fails to disclose or suggest all the features of independent claim 18.

That is, Watanabe fails to disclose or suggest a vibration system member displaced to a first magnetic circuit from a balanced position when the magnetic member receives a pulling force in a direction which causes the magnetic member to travel away from the balanced position by the magnetic field formed by the first magnetic circuit; and displaced to a second magnetic circuit from a balanced position when the magnetic member receives a pulling force in a direction which causes the magnetic member to travel away from the balanced position by the

magnetic field formed by the second magnetic circuit.

Based on the above discussion, independent claim 18 is not anticipated or rendered obvious by Watanabe. Likewise, claims 19-29 and 32-34 are not anticipated or rendered obvious by Watanabe at least by virtue of their dependencies (directly or indirectly) from independent claim 18.

In the Office Action, claim 30 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Dijkstra et al. (U.S. Patent No. 4,607,382, hereafter “Dijkstra”); and claim 31 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Dijkstra, and further in view of Proni (U.S. Patent No. 6,501,844).

Claims 30 and 31 depend from independent claim 18. As noted above, Watanabe fails to disclose or suggest all the features recited in independent claim 18 (as amended). Additionally, Dijkstra and Proni fail to overcome the deficiencies noted above in Watanabe. Accordingly, no combination of Watanabe, Dijkstra and Proni would result in, or otherwise render obvious, claims 30 and 31 at least by virtue of their dependencies (directly or indirectly) from independent claim 18.

Finally, the Examiner (during the interview) noted Azima as a reference that would be further considered. In particular, the Examiner noted that Fig. 11 of Azima (see e.g., Fig. 11a) could be relevant to the present invention (as recited in independent claim 18). However, for the reasons noted above (i.e., section II), Azima also fails to disclose or suggest the features recited in independent claim 18 (as amended).

IV. Conclusion

In light of the above, the Applicants respectfully submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the rejections presented in the Office Action, and pass this application to issue.

The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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